Robotic Welding
solutions from ESAB

A full line of robotic welding equipment for every application, industry, and environment.

Robotic Welding Solutions
Table of Contents

From Lab to Production Line....3
Welding Costs....4
Automation and Robotics Integration....5

Power Source Packages

Aristo Mig U5000i/U5000iw....6
Origo Mig 4002c/6502c....8
Aristo RoboFeed 3004w....9
Aristo RoboFeed 3004HW....10
Aristo RoboFeed - Wear Parts and Accessories....11
Aristo $U8_2$ & $W8_2$....12

Robotic Packages

Aristo Mig Robot Packages....13
Aristo Mig Robot Packages for Hollow Wrist robots....14
Aristo Mig Robot Packages for Standard Wrist robots....15

Swift Arc Robotic Cells

Robotic Welding Solutions - ESAB Offers You More....16
Swift Arc AL (Angle-Load) Systems....17
Swift Arc FL (Front-Load) Systems....18
Swift Arc SL (Side-Load) Systems....18
Swift Arc Systems - Package Components and Selection Guides....19

Robotic Torches

Aristo RT Robotic Torches....20
Aristo RT Robotic Torches - Ordering Information....21
Aristo RT NG....23

Friction Stir Welding

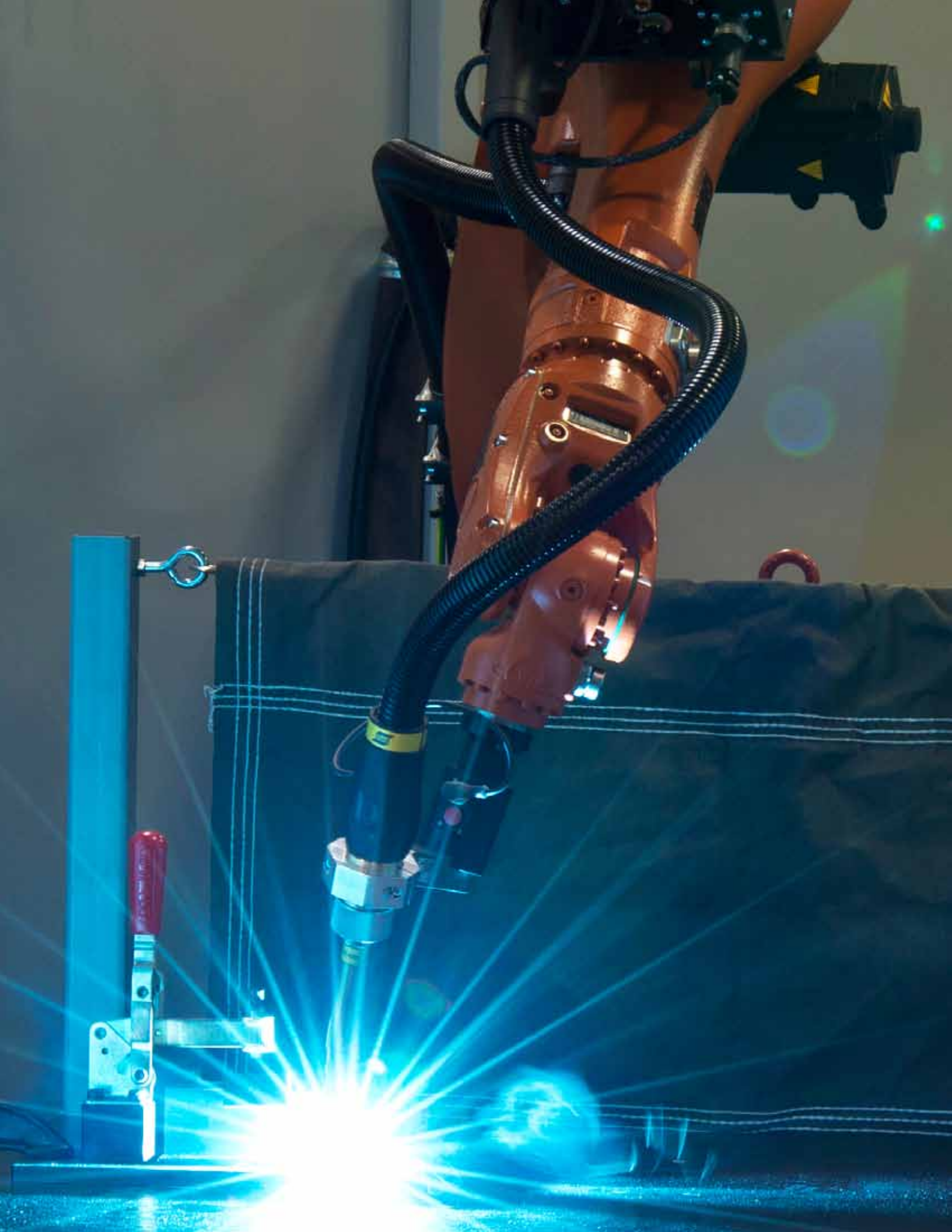
Friction Stir Welding Systems....24
Legio Friction Stir Welding....25
Rosio Friction Stir Welding Robot....26

Welding Processes

Swift Arc Transfer....27
Aristo SuperPulse....28
QSet....29

Accessories

OK AristoRod & Marathon Pac....30
Marathon Pac - Accessories....31
JetStream RT Torch Cleaning Station....33
RT 2000 Automatic Torch Cleaning Station....34



From Lab to Production Line
Powered by innovation

Modern industrial welding and cutting technology is pushing the boundaries of science – in power electronics, microprocessor controls and industrial and mechanical design. To stay ahead of the game, ESAB operates one of the industry's largest and most advanced R&D departments linked to a global network of support and maintenance services.

This translates to industry leading design and unrivaled technical support. Our engineers are continuously advancing with the latest materials and technologies.

Designed for exceptional productivity in the toughest industrial environments, additional benefits include long term reliability, ongoing technical advice, true life-cycle economy, and a comprehensive range of original accessories, wear parts, and consumables.

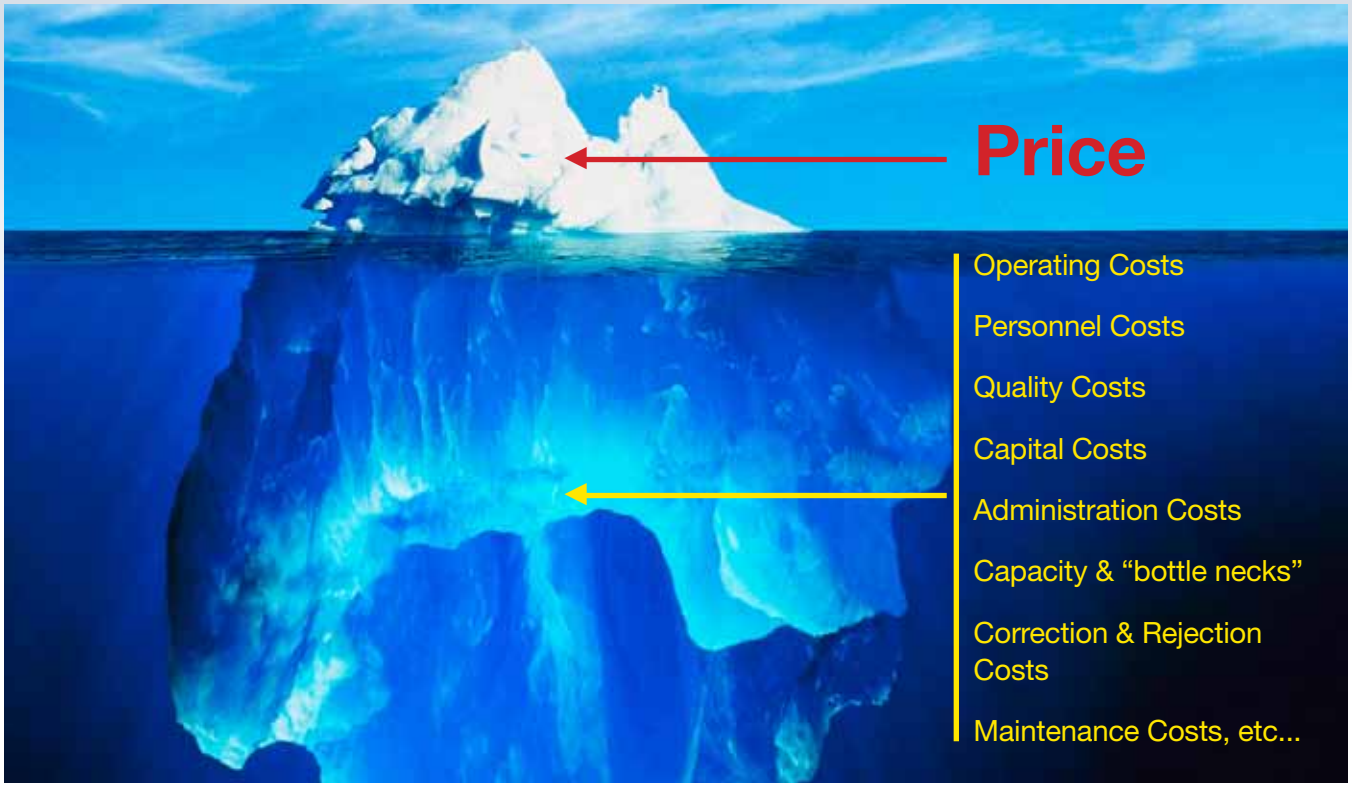
ESAB R&D programs are designed to add value to customers' business operations by introducing advanced welding technology to increase productivity, enhance quality, improve the working environment, and reduce environmental impact.

A close partnership between product development staff and customers is crucial to long term success. By analyzing and responding to market feedback, ESAB can help forecast market trends and focus research on anticipated needs. We don't just stay ahead of the game – we make sure our customers stay ahead too.

Our proactive approach to customer service forms a vital element of this partnership. ESAB doesn't wait until the product or system has been delivered – our customer support begins in the lab. Close consultation from the start ensures customers' needs and expectations are an integral part of the development process.

ESAB Automation Process Center, Florence, SC, USA.

Welding Costs
Find out what's below the waterline



Would you like to add value to your business and improve your profitability? With our value-added services, we deliver enhanced opportunities to our customers by helping them improve their business performance, competitiveness, and productivity.

Our "expert eyes" can help you review your current welding operation in search of the most optimum solution.

A profitability survey is a key milestone in the design of our value-added service offer. We use a total economy approach which allows us to identify both the visible and hidden costs in your production.

By applying the profitability survey directly to your production, we can identify cost reduction opportunities and develop exceptional value-added welding and cutting solutions designed to meet your individual needs.

Our expert technical team is at your disposal to perform a profitability survey adding value to your business by identifying the following:

The true source of cost reductions with:

- **Improved productivity**
- **Better total economy**
- **Improved quality**

New opportunities to increase revenues with:

- **Increased capacity**
- **Increased product sales**
- **Increased employee productivity**

New areas for reduced working capital with:

- **Optimized product mix**
- **Higher stock turn over**
- **Optimized material stock level**

Automation and Robotics Integration

In 1974, ESAB and ASEA (today's ABB) created the world's first electric welding robot. Since then, the industry has been transformed by developments in robotic welding technology, many pioneered by, or in collaboration with, ESAB.

Dual stations and robot travel tracks (1976), ceiling-mounted robots on a travelling gantry (1978), free-programmable positioners (1981), fully flexible manufacturing systems for arc welding (1984) – this relentless pace of development has made us a world leader. This leadership brings worldwide applications experience and expertise to the mutual benefit of everyone.

As an ESAB customer, you gain full and personal access to an unrivaled source of technical application expertise, service, and support.

Our worldwide representation and network of independent distributors offer practical knowledge and technical solutions. Our knowledge in material properties, welding, cutting or general productivity enhancement is second to none.

Equipment

- **Equipment designed for everything from mass production to repair and maintenance**
- **Advanced welding processes**
- **Designed for automatic/semi-automatic applications**
- **Versatility to optimize welding processes**
- **User-friendly controls**
- **Reduced energy consumption**
- **Smart welding processes such as Aristo SuperPulse, Swift Arc Transfer, and QSet**
- **Smart technology for consistent quality**
- **Long lasting dependability**
- **Limit functionality prevents welding outside of specifications**

Automation & Robotics Integration

- **Full range of processes from MIG to SAW**
- **Easy to integrate interfaces**
- **Reduced production downtime**
- **Packaging solutions for continuous, high duty cycle welding**
- **Weld logging improves quality and productivity**

Aristo® Mig U5000i/U5000iw

Power source packages

3Phase DC CVCC 3 YEAR WARRANTY 100% SATISFACTION GUARANTEE

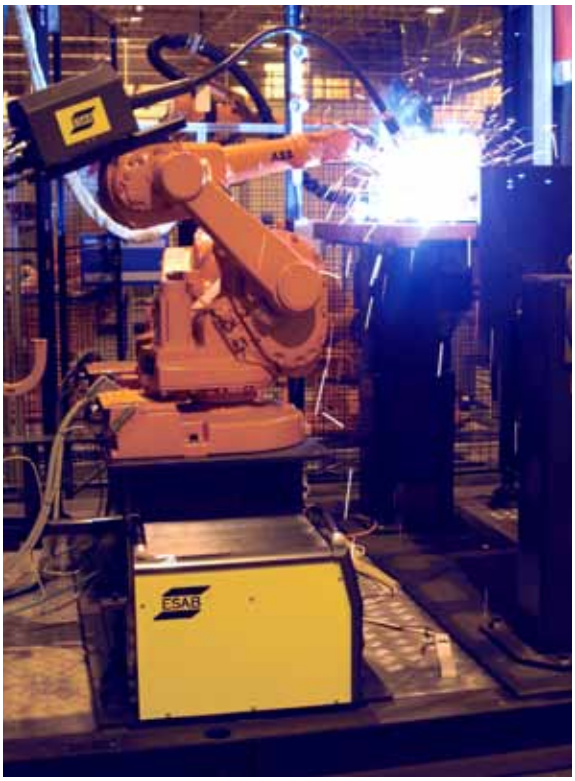
- **Multiprocess equipment for MIG, Pulse MIG, Stick, TIG, Pulse TIG, and Carbon Arc Gouging**
- **Wide range of pre-programmed synergic lines; the Aristo Pendant U8$_2$ Plus provides the facility to define and store customized synergic lines for any material or gas combinations**
- **The TrueArcVoltage System measures the correct arc voltage value independent of the length of the connection cable, return cable or welding gun**
- **Dust filter to handle tough and dirty environments and avoid grinding dust and metal particles inside the chassis**
- **Aristo SuperPulse welding process with the ability to control the heat input and bridge gaps in part fit-up**

Robust and Powerful

The Aristo Mig U5000i is the ideal choice when it comes to efficient production or pre-fabrication of high-alloyed materials with a very high demand on the welding performance.

This power source is a compact and sturdy piece of equipment with a chassis made of extruded aluminum sections: Alutech™. This is a robust material that withstands rough treatment.

The power source is based on inverter IGBT technology that provides reliable equipment with outstanding welding characteristics. The control and communication CANbus system means less cables, which in turn increases operational reliability.



Flexibility

The power source is optimized to operate together with Aristo wire feeders. Connection cables up to 115 ft (35 m) provides a working radius of up to 115 ft (35 m) to suit your individual welding needs.

The Aristo Mig is capable of controlling multiple wire feeders from a single power source. This gives you the ability to have a repair feeder or multiple wire types connected to a single Aristo Mig. The weld parameters change automatically to match the feeder in use.

The TrueArcVoltage System guarantees that you weld with the correct arc voltage independent of any voltage drop in the welding cables. This means that you will get the same arc voltage and weld result whether you have a short connection cable and 10 ft (3 m) gun or a set-up with 115 ft (35 m) working radius.

Aristo Mig U5000i/U5000iw
Power source packages

Ordering Information

Aristo Mig U5000i (Air-Cooled) 0459230885
Aristo Mig U5000iw (Water-Cooled) 0459230886

Delivery content: 16.5 ft (5 m) mains cable and termination resistor plug.

Options and Accessories

Feed Selector Box (multiple wire feeders)..... 0349311825

Digital Interfaces
Aristo W8$_2$ Integrated (ABB)..... 0460891880
Aristo W8$_2$ Devicenet (Backpack)..... 0460891881
Aristo W8$_2$ Profibus (Backpack..... 0461891882)
Aristo W8$_2$ CAN Open (Backpack)..... 0461891883

Analog Interfaces
Aristo Retrofit I/O ABB S3/S4..... 0461090881
Aristo Retrofit I/O Universal 0461090882

Connection Cables, Water-Cooled
5.5 ft (1.7 m) 0459528970
16.5 ft (5 m) 0459528971
33 ft (10 m) 0459528972
49 ft (15 m) 0459528973
82 ft (25 m) 0459528974
115 ft (35 m) 0459528975
ESAT service kit 0458847881

Specifications

	Aristo Mig U5000i
Input voltage	460 V, 3 phase, 60 Hz
Fuse slow, A	35
Setting range	
MIG, A/V	16-500/8-60
Stick DC, A	16-500
TIG DC, A	4-500
Permitted load:	
60% duty cycle, A/V	500/39
100% duty cycle, A/V	400/34
Open circuit voltage, V	68-88
Energy save mode, W	50
Input power, kW	23
Power factor at maximum current	0.85
Efficiency at maximum current, %	86
Control voltage, V, Hz	42, 50/60
Dimensions, L x W x H	25 x 16 x 20 in. (625 x 394 x496 mm)
Dimensions with cooling unit, L x W x H	25 x 16 x 31 in. (625 x 394x 776 mm)
Enclosure class	IP 23
Insulation class (main trafo.)	H
Operating temperature, °F (°C)	14 to 104 (-10 to +40)
Weight	152 lbs (69 kg)
Application class	S
Standards	IEC/EN 60974-1, EN 50199
Water Cooling Unit	
Cooling capacity, W, gal/min (l/min)	2500 at 40°C, 0.4 (1.5)
Coolant volume, gal/min (l/min)	1.4 (5.5)
Max flow, l/min	0.5 (2.0)
Max pressure, bar	50 (3.4)
Weight	44 lbs (20 kg)
Dimensions, L x W x H	25 x 16 x 11 in. (621 x 389 x 266 mm)

Origo™ Mig 4002c/6502c
Power source packages

3Phase DC CVCC 3 YEAR WARRANTY 100% SATISFACTION GUARANTEED

- **Multi-voltage – ready to work anywhere**
- **Energy saving mode saves power**
- **Outstanding arc across total power range**
- **Robust power technology**
- **Dust filter to prevent grinding dust and metal particles from entering the chassis (optional)**

Ordering Information

MIG 4002c Aristo Feed 3004 U6 Basic 0558101345
MIG 6502c Aristo Feed 3004 U6 Basic 0558101349
MIG 4002c Aristo Feed 3004 U8$_2$ Plus Basic 0558101355
MIG 6502c Aristo Feed 3004 U8$_2$ Plus Basic 0558101359

Basic package includes: power source, feeder, 15 ft (4.5 m) 400 A torch.

Power Source Data

	Origo Mig 4002c	Origo Mig 6502c
Input voltage	230/460/575 V 3 ph 60 Hz	230/460/575 V 3 ph 60 Hz
Permitted load at 60% duty cycle	400 A / 34 V	650 A / 44 V
Permitted load at 100% duty cycle	310 A / 30 V	500 A / 39 V
Primary current at 60% duty cycle	56/29/22 A	103/59/52 A
Primary current at 100% duty cycle	43/25/20 A	80/46/33 A
Setting range (DC) GMAW/FCAW (MIG)	16–400 A / 8–34 V	16–650 A / 8–44 V
Setting range (STICK)	16–400 A/8-36 V	16–650 A/8-44 V
Open circuit voltage GMAW/FCAW (MIG)	70 V	70 V
Open circuit voltage SMAW (STICK)	61 V	61 V
Open circuit power	500 W	670 W
In energy saving mode, 15 min. after welding	60 W	60 W
Power factor at maximum current	0.88	0.90
Efficiency at maximum current	70%	76%
Control voltage	42 V, 50/60 Hz	42 V, 50/60 Hz
Dimensions, L x W x H	32.6 x 25.1 x 32.8 in. (830 x 640 x 835 mm)	32.6 x 25.1 x 32.8 in. (830 x 640 x 835 mm)
Weight	328 lbs (149 kg)	489 lbs (222 kg)
Operating temperature	14 to 104°F (-10 to 40°C)	14 to 104°F (-10 to 40°C)
Enclosure class	IP 23	IP 23

For further information, please contact your ESAB Robotic Specialist.

Aristo® RoboFeed 3004w

The optimum wire feeding solution for robotic applications

- **Aristo RoboFeed 3004w is a completely enclosed feeding unit which includes the drive control system and the operational functions for gas purge and wire inching, forward and reverse**
- **The unit is equipped with mounting bolts with rubber absorbers to protect the components from the high acceleration and deceleration forces of the robot**
- **Sturdy design with aluminum casing for reduced weight and ideal for use in tough environments**
- **The digitally controlled feed units perform accurate speed control with the aid of a pulse encoder on speeds ranging from 31.5 to 1181 ipm (0.8 to 25 m/min)**
- **The 4-roll feed mechanism with grooves in both feed and pressure rolls give stable feeding and low wear of the wire, all of which help to ensure reliable wire feeding**
- **Aristo RoboFeed 3004w is available with Ø1.2 in. (Ø30 mm) rollers for wires up to Ø1/16 in. (Ø1.6 mm)**
- **The feeder mechanism is easy to access and all wear parts can be exchanged without tools**
- **One single pressure device makes it easy to adjust the appropriate feeding pressure**
- **All electronic components are protected in a separate compartment**

Ordering Information

Aristo RoboFeed 3004w ELP 12p 0461000891

Options and Accessories

Assembly bracket universal..... 0461 038 880

See additional options and accessories on page 11.

Specifications

	Aristo RoboFeed 3004w
Input voltage, V, Hz	42, 50/60
Drive mechanism	4 WD
Drive rollers, in. (mm)	1.2 (30)
Wire feed speed, ipm (m/min)	31.5 - 1181 (0.8 - 30)
Dimensions, L x W x H	14.25 x 9.7 x 9.25 (362 x 246 x 235 mm)
Weight	16 lbs (7.3 kg)
Speed control	Pulse encoder
Enclosure class	IP 23
Standards	IEC 60974-5
Wire Dimensions	
Steel in. (mm)	.025 - 1/16 (0.6 - 1.6)
Stainless steel, in. (mm)	.025 - 1/16 (0.6 - 1.6)
Aluminum, in. (mm)	.040 - 1/16 (1.0 - 1.6)
Cored wire, in. (mm)	.030 - 1/16 (0.8 - 1.6)

Aristo® RoboFeed 3004HW
Small feeder for Hollow Wrist robots

- **Aristo RoboFeed 3004HW is specially designed for use with hollow wrist robots that have the torch package inside the robot arm**
- **Lightweight and small size are needed to allow hollow wrist robots to use their high accelerations and perform all motions**
- **Completely enclosed feeding unit provides operational functions for gas purge and wire inching**
- **The PCB is separate from the feeder housing in order to provide a small, lightweight unit**
- **The Aristo FeedControl box allows for easy maintenance**
- **Sturdy design with plastic cover for reduced weight and ideal for use in tough environments**
- **The digitally controlled feed unit performs accurate speed control with the aid of a pulse encoder on speeds ranging from 31.5 to 1181 ipm (0.8 to 25 m/min)**
- **The 4-roll feed mechanism with grooves in both feed and pressure rolls gives stable feeding and low wear on the wire, all of which help to ensure reliable wire feeding**
- **Supports Aristo SuperPulse and Swift Arc Transfer processes including QSet, the Short Arc welding process with artificial intelligence**

Ordering Information

Aristo RoboFeed 3004 HW 0465040880
Aristo FeedControl HW 0461080881

Options and Accessories

Cable kit assembly 0465412880

Connection cable Robofeed 3004HW to FeedControl HW, 16.5 ft (5 m).

Mounting bracket for Robofeed 3004 HW on:

ABB IRB 1520 ID 0465381880
ABB IRB 1600 ID 0465388880
ABB IRB 2600 ID 0465401880

Yaskawa Motoman MA 1400 0465391880
Yaskawa Motoman MA 1900 0465394880
Fanuc ArcMate 100 iC 0465398880
Fanuc ArcMate 120 iC 0465404880

See additional options and accessories on page 11.

Specifications

	Aristo RoboFeed 3004HW
Input voltage, V, Hz	60 DC (PWM)
Max load @ 60% duty cycle	500 A
Max load @ 100% duty cycle	280 A
Drive mechanism	4 WD
Drive rollers, in. (mm)	1.2 (30)
Wire feed speed, ipm (m/min)	31.5 - 1181 (0.8-30)
Dimensions, L x W x H	10 x 7 x 8.7 (251 x 182 x 221 mm)
Weight	12 lbs (5.4 kg)
Speed control	Pulse encoder
Enclosure class	IP 2X
Standards	IEC 60974-5, IEC 60974-10
Wire Dimensions	
Steel in. (mm)	.025 - 1/16 (0.6-1.6)
Stainless steel, in. (mm)	.025 - 1/16 (0.6-1.6)
Aluminum, in. (mm)	.040 - 1/16 (1.0-1.6)
Cored wire, in. (mm)	.030 - 1/16 (0.8-1.6)

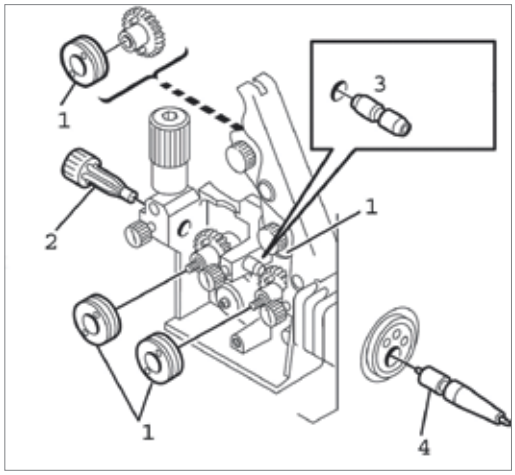
Aristo® RoboFeed 3004w/HW
Wear parts and accessories

Aristo RoboFeed 3004w/HW Wear Parts

Wire Diameter in. (mm)	Wire Type	1 Feeder Roller	2 Inlet Nozzle	3 Intermediate Nozzle	4 Outlet Nozzle	Groove Type	Marking
.023/.030 (0.6/0.8)	Fe, Ss, C	0459052001	0455049001	0455072002	0469837880	V	0.6 S2 & 0.8 S2
.030/.035–.040 (0.8/0.9-1.1)	Fe, Ss, C	0459052002	0455049001	0455072002	0469837880	V	0.8 S2 & 1.0 S2
.035–.040/.045* (0.9-1.0/1.1)*	Fe, Ss, C	0459052003	0455049001	0455072002	0469837880	V	1.0 S2 & 1.2 S2
.052/.1/16 (1.3/1.6)	Fe, Ss, C	0459052013	0459049001	0455072002	0469837880	V	1.4 S2 & 1.6 S2
.035–.040/.045 (0.9-1.0/1.1)	C	0458825001	0455049001	0455072002	0469837880	V-K	1.0 R2 & 1.2 R2
.045/.052 (1.1/1.3)	C	0458825002	0455049001	0455072002	0469837880	V-K	1.2 R2 & 1.4 R2
1/16 (1.6)	C	0458825003	0459049001	0455072002	0469837880	V-K	1.6 R2
.030/.035–.040 (0.8/0.9-1.0)	Al	0458824001	0455049001	0456615001	0469837881	U	0.8 A2 & 1.0 A2
.045/1/16 (1.1-1.6)	Al	0458824003	0455049001	0456615001	0469837881	U	1.2 A2 & 1.6 A2

C = cored wire * as delivered K = knurled groove

Aristo FeedControl is equipped with a box to connect welding cable and water hoses outside the electronics compartment.



Aristo RoboFeed 3004w/HW Accessories

Connection Cables

16.5 ft (5 m), air-cooled	0740538890
33 ft (10 m), air-cooled	0740538881
49 ft (15 m), air-cooled	0740538882
16.5 ft (5 m), water-cooled	0740538895
33 ft (10 m), water-cooled	0740538886
49 ft (15 m), water-cooled	0740538887
82 ft (25 m), water-cooled	0740538888
115 ft (35 m), water-cooled	0740538889

Assembly bracket universal	0461038880
Quick connector MarathonPac	F102440880

Wire Conduits

6 ft (1.8 m)	F102437881
10 ft (3 m)	F102437882
12.5 ft (3.8 m)	F102437889
15 ft (4.5 m)	F102437883
Wire 19.7 ft (6 m)	F102437887
21.3 ft (6.5 m)	F102437890
26 ft (8 m)	F102437884
39.4 ft (12 m)	F102437885

Aristo® U8$_2$ & W8$_2$

The ultimate control system for Aristo power sources and wire feeders

- **Aristo U8$_2$ creates a whole new universe of possibilities - maximum functionality, minimum complexity**
- **Five function buttons, single menu and "Enter" button, and three setting wheels cover every option**
- **Large, bright, easy-view LED display and knurled setting wheel for simple gloves-on, visor-down operation**
- **Full USB connectivity and a broad choice of advanced add-on modules Aristo W8$_2$ (DeviceNet, Profibus, CANopen and Ethernet) for comprehensive Fieldbus and LAN communication**
- **Supports manual and automated welding applications**
- **Dials for quick setting of wire feed speed and voltage**
- **QSet for optimum Short Arc setting**
- **Limit editor set and measured values**
- **Release pulse to release frozen wire**
- **LAN (via Aristo W8$_2$)**
- **WeldPoint**
- **Standard package synergic lines (92)**
- **Additional for Aristo U8$_2$ Plus:**
  - **Complete package synergic lines**
  - **Aristo SuperPulse**
  - **Filemanager**
  - **Auto-save mode**
  - **User defined synergic lines**
  - **Production statistics**

WeldPoint brings the shop floor to the production office.

Aristo U8$_2$ Plus

Aristo W8$_2$ Integrated

Aristo W8$_2$ Fieldbus

Ordering Information

Aristo U8$_2$	0460820880
Aristo U8$_2$ Plus	0460820881
Aristo U8$_2$ Plus I/O	0460820882
Aristo W8$_2$ Integrated	0460891880
Aristo W8$_2$ Fieldbus (DeviceNet)	0460891881
Aristo W8$_2$ Fieldbus (Profibus)	0460891882
Aristo W8$_2$ Fieldbus (CANopen)	0460891883

Interconnection cable W8$_2$ for:

Aristo Mig U5000i	0456527885
Aristo Mig 4002c/6502c	0462000880

Delivery content Aristo U8$_2$: 4 ft (1.2 m) control cable with 12p connector, complete holder and English user manual.

Delivery content W8$_2$ Fieldbus: English installation manual and WeldPoint.

Options and Accessories

Extension cable Aristo U8$_2$, 24.6 ft (7.5 m)	0460 877 891
WeldPoint	0462 045 880

Specifications

	Aristo U8$_2$	Aristo W8$_2$
Input voltage, V, Hz	42, 50/60	42, 50/60
Power supply (from robot)	24 V, DC	24 V, DC
Communication system	CANbus	CANbus
Dimensions, L x W x H in. (mm)	9.6 x 8.7 x 2 (244 x 222 x 48)	14.4 x 4 x 6.3 (366 x 101 x 159)
Enclosure class	IP23	IP23
Operating temperature, F° (C°)	14 to 104 (-10 to 40)	14 to 104 (-10 to 40)
Transport temperature, F° (C°)	-13 to 131 (-25 to 55)	-13 to 131 (-25 to 55)
Weight	2.6 lbs (1.2 kg)	8.8 lbs (4 kg)
Standards	IEC/EN 60974 -1, -10	IEC/EN 60974 -1, -10

Aristo® Mig Robot Packages
High-tech welding equipment

ESAB's Aristo Mig robot package provides superior welding technology that is easy to install and use. The package can be connected to different types of robots for new installations as well as for retrofitting existing installations.

The Aristo Mig process package (with ESAB Canbus technology) offers a choice of Aristo Mig inverter-based power sources, high-speed, high-precision, robot-mounted wire feeders, various robotic interfaces, and the most powerful control pendant in industry - the Aristo Pendant U8$_2$ Plus control box.

The interface with the robot controller can be achieved with analogue/digital I/O communication or via EtherCat, DeviceNet, Profibus or CANopen.

- **Aristo packages for Hollow Wrist robots**
- **Aristo packages for Standard Wrist robots**

Aristo® Mig Robot Packages
For Hollow Wrist robots

Standard packages are available in different configurations for ABB, Motoman, Fanuc, and KUKA.

Example 1
Water-Cooled Aristo Mig for KUKA KR-5, KR-6, K6-16 Aristo Mig U5000i & W8$_2$ & safety/interlock set

- Aristo Mig U5000iw
- Aristo Pendant U8$_2$ Plus
- Power source to robot interconnect cable 33 ft (10 m)
- Aristo W8$_2$ Devicenet
- Aristo RoboFeed 3004w 12p ELP
- Aristo RT 62 torch neck 45°
- Torch cable bundle 4 ft (1.2 m)
- Straight 0° torch mount
- Flange adaptor
- Cable package water-cooled 16.5 ft (5 m)

** Other types of torch neck on-demand.*

Example 2
Water-Cooled Aristo Mig for KUKA K6-16HW

- Aristo Mig U5000iw
- Aristo Pendant U8$_2$ Plus
- Power source to robot connection cable 33 ft (10 m)
- Aristo W8$_2$ Devicenet
- Aristo RoboFeed 3004HW
- Aristo FeedControl HW
- Aristo RT 62 torch neck 45°
- Infiniturn Torch 52.7 in. (1340 mm)
- Rigid torch mount
- Flange adaptor
- Cable package water-cooled 16.5 ft (5 m)

** Other types of torch neck on-demand.*

Optional:

- Stand alone bobbin holder complete with 15 ft (4.5 m) Marathon Pac hose

Aristo® Mig Robot Packages
For Standard Wrist robots

Standard packages are available in different configurations for ABB, Motoman, Fanuc, and KUKA.

Example 3

Air-Cooled Mig 4002c Devicenet for IRB 2600

- Origo Mig 4002c
- Aristo Pendant U8$_2$ Plus
- Extension cable 24.6 ft (7.5 m)
- Aristo W8$_2$ Devicenet
- Interconnection cable W8$_2$ to power source
- Connection cable 33 ft (10 m) W8$_2$/robotcabinet
- Aristo RoboFeed 3004w 12p ELP
- Aristo RT torch with torch neck, 22°, torch mount, and adaptor
- Assembly bracket for IRB 2600
- Cable set power source - wire feeder, 'high end version' 33 ft (10 m), incl. clamp and Reiku hose
- Mounting bracket for the 'high end' cable set with the Reiku hose for IRB 2600

Example 4

Water-Cooled Mig 4002cw Devicenet for IRB 2600

- Origo Mig 4002cw
- Water flowguard power source
- Aristo Pendant U8$_2$ Plus
- Extension cable 26.4 ft (7.5 m)
- Aristo W8$_2$ Devicenet
- Interconnection cable W8$_2$ to power source
- Connection cable 33 ft (10 m) W8$_2$/robot cabinet
- Aristo RoboFeed 3004w 12p ELP
- Aristo RTw torch with torch neck, 22°, torch mount, and adaptor
- Assembly bracket for IRB 2600
- Cable set power source - wire feeder, 'high end version' 33 ft (10 m), incl. clamp and Reiku hose
- Mounting bracket for the 'high end' cable set with the Reiku hose for IRB 2600

Optional:

- Stand alone bobbin holder complete with 15 ft (4.5 m) Marathon Pac hose

Robotic Welding Solutions
ESAB offers you more

Approximately one third of all robotic welding installations in North America are pre-engineered cells. Pre-engineered cells are designed to handle a wide variety of applications compared to a custom cell where the cell and structure are designed around a fabricator's specific application.

These pre-engineered cells are primarily installed in the automotive industry, but have been gaining popularity in general fabrication facilities. With this market trend, ESAB has taken a new approach to robotic welding solutions. Our "ESAB Offers You More" approach begins with our diverse selection of pre-engineered welding cells. These pre-engineered robotic solutions allow us to maximize the design features and minimize the cost when compared to a complex integration project. The end result is a robust welding system that can be delivered and installed quickly with maximum flexibility.

All of our robotic welding cells have standard features that are sold only as options with other cells in the marketplace. ESAB cells include features and upgrades that are essential to your success and operator satisfaction. Quite often, valuable features are omitted due to cost. This results in incomplete solutions that, over the long term, leaves customers unsatisfied.

The "ESAB Offers You More" approach is designed to provide maximum throughput at the highest quality while minimizing the overall cost. Our modular building concepts provide a platform that can be easily upgraded ensuring end user satisfaction years after the initial purchase. End user risk and delivery lead times are low due to the fact that our systems are standard products.

Swift Arc AL Systems
Angle-load robot cells

- **The Swift Arc AL (angle-load) robot system, is an economic configuration for a complete work cell; ideal for job shops introducing robotics to their applications**
- **Simple cell design with easy-open manual doors for minimum maintenance and two independent working centers for maximum productivity**
- **Available with the flat two table option, AL-0, for basic operation up to the AL-2 with multi-axis servo options for more complex parts**
- **The angular design of the welding cell allows one table to be unloaded and reloaded with parts during the welding operation on the adjacent table; this continuous "arc on" time is a significant factor in production improvement**
- **The dual table design is well suited to batch style production with a high degree of repeatability**
- **The available table size options ensure that the cell will meet your part size requirements; side-mounted interface allows for simplified operation**
- **The cell features the KUKA KR-5 Arc Robot with PC-based KRC-2 controller with 11 lbs (5 kg) payload and 55.5 in. (1.5 m) reach**
- **The complete system is delivered ready-to-weld; just hook up the input power, gas and wire and a single button press is all that is needed to start welding parts**

- **The state-of-the-art welding power source, wire feeder and welding torch are offered as standard components, designed to minimize spatter and burn-through on thin materials**
- **Each cell package comes with a complimentary Marathon Pac bulk wire drum**
- **TruArcVoltage is another standard feature offered to provide truly accurate voltage information for critical welding**
- **Other standard features include harmonized motion between the robot and external axes, open architecture Windows HMI, easy teaching with the PC-based controller, constant wrist orientation function, electronic mastering for quick calibration, and much more**

Please contact ESAB for ordering information.

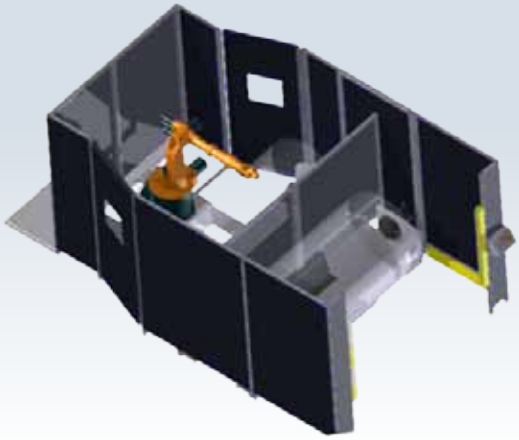
Specifications

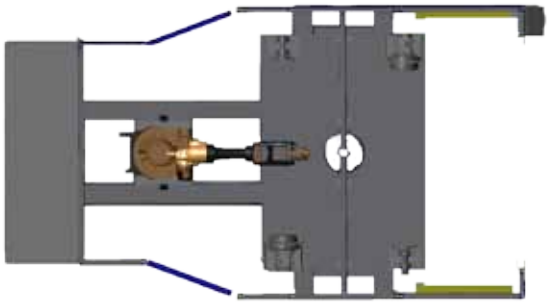
	AL-0-36X42-1000 Cell	AL-1-36X42-1000 Cell	AL-2-36X42-1000 Cell
Number of fixed tables	2	1	0
Table dimensions, L x W	2 tables, 36 x 42 in. (0.9 x 1.0 m)	1 table 36 x 42 in. (0.9 x 1.0 m)	N/A
Number of rotation axes	0	1	2
Payload for fixed table	1000 lbs (453.5 kg)	1000 lbs (453.5 kg)	N/A
Rotational axis payload	N/A	450 lbs (204 kg)	450 lbs (204 kg)
Rotation axis HS/TS spacing	N/A	42 in. (1.0 m)	42 in. (1.0 m)
Rotation swing diameter	N/A	36 in. (0.9 m)	36 in. (0.9 m)
Max RPM for rotation axis	N/A	24	24
Cell dimensions, W x D x H	154 x 81 x 90 in. (3.8 x 2 x 2.3 m)	154 x 81 x 90 in. (3.8 x 2 x 2.3 m)	154 x 81 x 90 in. (3.8 x 2x 2.3 m)
Approx floor space required	< 70 sqft (21.3 sqm)	< 70 sqft (21.3 sqm)	< 70 sqft (21.3 sqm)
Loading height	40 in. (1 m)	40 in. (1 m)	40 in. (1 m)
Walking distance between center of cell and table	42 in. (1 m)	42 in. (1 m)	42 in. (1 m)
Incoming power requirements	460/3/60 33 KVA	460/3/60 33 KVA	460/3/60 33 KVA
Shipping weight (approx)	3200 lbs (1451.5 kg)	3300 lbs (1497 kg)	3400 lbs (1542 kg)
Optional Cell Specification and Upgrades			
Optional fixed table spec	2500 lbs (1134 kg)	2500 lbs (1134 kg)	N/A
Optional axis payload spec	N/A	900 - 6000 lbs (408-2721.5 kg	900 - 6000 lbs (408-2721.5 kg
Rotational axis max RPM	N/A	18- 32	18- 32

Swift Arc FL Systems
Front-load robot cells

- The Swift Arc FL (front-load) robotic cell is used for small to medium size parts with very high production rates
- This cell features a servo table that indexes to allow parts to be unloaded and new parts loaded during the welding process; this continuous “arc on” time is a significant factor in production improvement
- The superior cell design coupled with the latest in welding technology is a combination that is guaranteed to help your organization excel in todays challenging marketplace
- The Endless Marathon Pac is another innovation brought to you by ESAB (each cell comes with a complimentary Marathon Pac)
- The Aristo RT torch, included with the cell, has the highest TCP (tool center point) of any robotic torch
- The torches also have universal contact tips that can be interchanged between water-cooled or gas-cooled torches

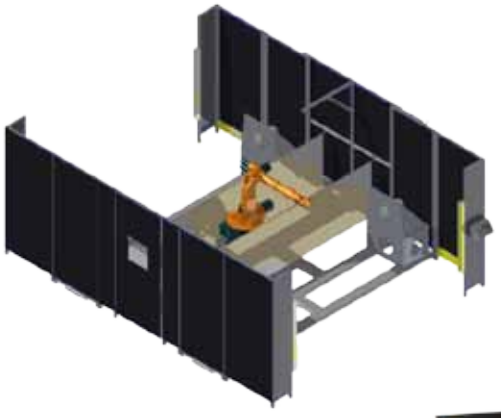
Please contact ESAB for ordering information and technical specifications.





Swift Arc SL Systems
Side-load robot cells

- The Swift Arc SL (side-load) robotic cell is used for larger sized parts with very high production rates
- This cell features Dual Trunions that can manipulate the part
- The two sides allow parts to be unloaded and new parts loaded during the welding process; this continuous “arc on” time is a significant factor in production improvement
- The superior cell design coupled with the latest in welding technology is a combination that is guaranteed to help your organization excel in todays challenging marketplace
- The Endless Marathon Pac is another innovation brought to you by ESAB (each cell comes with a complimentry Marathon Pac bulk wire drum)
- The Aristo RT torch, included with the package, has the highest TCP (tool center point) of any robotic torch
- The torches also have universal contact tips that can be interchanged between water-cooled or gas-cooled torches



Please contact ESAB for ordering information and technical specifications.

Swift Arc Systems
Package components and selection guides

Standard Package Includes:

- Aristo Mig U5000i Power Source
- Aristo Pendant U8$_2$ Plus
- Aristo Robofeed 3004w Wire Feeder
- Aristo RT 62G Torch: 500 A, Gas-Cooled
- 16.5 ft (5 m) Cable Package
- KUKA KR-5 Arc Robot
- KUKA KR-C2 Robot Controller
- Robot Pendant

Welding Power Source Selection Guide

	GMAW (MIG)		GTAW (TIG)			Rated Output							Primary Input	
Power Source	Pulse Arc	Super Pulse	DC	Touch TIG	High Frequency	Rated Current (A) @ 60% Duty Cycle	Current Range (A)	Power Factor	Efficiency %	Switching Freq. (kHz)	Idle Power (W)	Machine Type	AC Voltage	1 or 3 Phase
Origo Mig 4002c	•		•	•		400	16-400	0.88	70	20	60	Chopper	230/460	3
Origo Mig 6502c	•		•	•		650	16-650	0.90	76	20	60	Chopper	230/460	3
Aristo Mig U5000i	•	•				500	16-500	0.86	88	52	50	Inverter	460	3

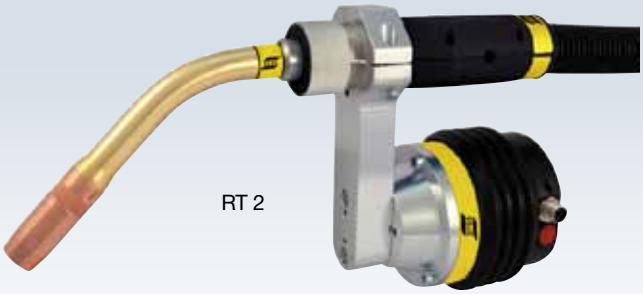
Swift Arc System Selection Guide

Swift Arc System Name	AL-0 36x42-1000	AL-2 36x42-1000	FL-1-66	FL-1-84	FL-3-115-2000	SL-2 60x120-4000	SL-4 60x120-4000
Customer Area Of Focus	Job Shops		High Volume Production			Heavy Construction	
Application	Simple Parts	Complex Parts	Small Parts	Med Parts	Large Parts	1 axis Rotation/Side	Multi Axis Rotation/Side
Typical Size Part							
Less Than 60 x 120 in. (1.5 x 3.0 m)						•	•
Less Than 40 x 72 in. (1.0 x 1.8 m)					•	•	•
Less Than 36 x 42 in. (0.9 x 1.0 m)	•	•		•	•	•	•
Less Than 24 x 33 in. (0.6 x 0.8 m)	•	•	•	•	•	•	•
Part Weight							
Up To 4000 lbs (1814 kg)						•	•
Up To 2000 lbs (907 kg)					•	•	•
Up To 1200 lbs (544 kg)				•	•	•	•
Up To 1000 lbs (453.5 kg)	•	•		•	•	•	•
Up To 400 lbs (181.5 kg)	•	•	•	•	•	•	•
Additional Factors							
Weld can be performed on single side	•	•	•	•	•	•	•
Part requires flipping to complete welds		•			•	•	•
Part requires 360 degree rotation		•			•	•	•
Part is best welded with multi axis rotation							•
Part requires short welding cycle time	•	•	•	•	•		

Aristo® RT Robotic Torches
for Standard and Hollow Wrist robots in single arc and tandem applications

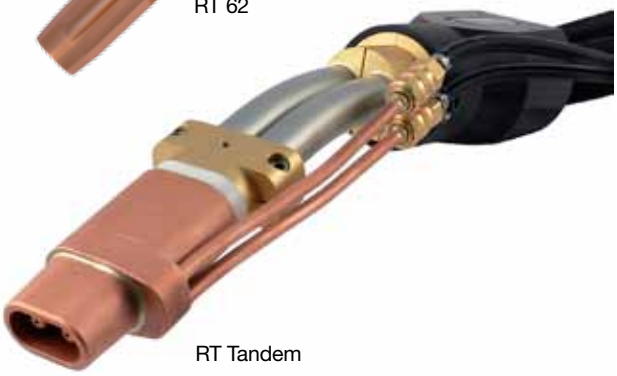
The new range of Aristo RT robotic torches offer world class performance in single arc or tandem applications.

- **These torches are designed for common robotic welding applications and are available for the following robotic packages:**
  - **Standard Wrist (external cable)**
  - **Helix - Hollow Wrist (+/- 220°)**
  - **Infiniturn - Hollow Wrist (endless rotation)**
- **Three gas-cooled models and three water-cooled models are available in different swan neck angles**
- **Packages are available for ABB, Fanuc, KUKA, and Motoman/Yaskawa robotic systems**



RT 2

RT 62



RT Tandem

Torch mount with safety off

KS-1 (collision sensor)

FLC Hollow Wrist torch mount rigid version

Adaptor flange

Special Features

- **Built in blow out port can be used for cooling and/or cleaning of the torch neck**
- **Long-life consumables, torch body, and spare parts**
- **Designed for all robot types and models**
- **Quick-change torch system**
- **Simple cable replacement**
- **Air and water-cooled torches use the same spare parts**
- **Threaded gas nozzles with additional clamping for better heat transfer prolongs consumable life**
- **Optimized gas flow provides stable and reliable welding arc**

Industry Best TCP (Tool Center Point)

- **Collision-resistant torch design means no re-adjustment of the torch neck reducing downtime and improves productivity**
- **Constant TCP even when changing necks or cables, reduces part programming and program “touch up” time**

Torch Design

- **Large, strong brass outer tube assures TCP stability due to its high wall thickness**
- **Low spatter adhesion to brass due to its physical character**
- **Brass torch flange**
- **Highest precision guarantees stability**
- **Precise alignment of torch, cable assembly interface and torch mount assure precise and constant TCP**

Aristo® RT Robotic Torches
Ordering information

Ordering Information - Torch Necks (interchangeable between all robot types)

	Air-Cooled		Water-Cooled	
Aristo RT Torch	**RT 42G**	**RT 62G**	**RT 42W**	**RT 62W**
Neck 0°	0700300441	0700300452	0700300474	0700300485
Neck 22°	0700300442	0700300453	0700300475	0700300486
Neck 36°	0700300443	0700300454	0700300476	0700300487
Neck 45°	0700300444	0700300455	0700300477	0700300488
Neck 45°, long version	0700300445	0700300456	0700300478	0700300489

For further information, please contact your ESAB Robotic Specialist.

Ordering Information - Torch Bundle, Feeder to Neck (Standard Wrist)

	Air-Cooled		Water-Cooled	
Aristo RT Torch	**RT 42G**	**RT 62G**	**RT 42W**	**RT 62W**
Technical Data: mixed gas	350 A 60% DC gas-cooled 0° 22° 36° 45°	420 A 60% DC gas-cooled 0° 22° 36° 45°	350 A 100% DC water-cooled 0° 22° 36° 45°	450 A 100% DC water-cooled 0° 22° 36° 45°
Cable, Euro connector, 3.2 ft (1.0 m)	0700300458	0700300458	0700300491	0700300491
Cable, Euro connector, 4 ft (1.2 m)	0700300459	0700300459	0700300492	0700300492
Cable, Euro connector, 4.3 ft (1.3 m)	-	-	0700300493	0700300493
Cable, Euro connector, 4.5 ft (1.4 m)	0700300460	0700300460	-	-
Cable, Euro connector, 5 ft (1.5 m)	0700300461	0700300461	0700300494	0700300494
Cable, Euro connector, 6 ft (1.8 m)	0700300462	0700300462	-	-
Cable, Euro connector, 10 ft (3.0 m)	-	-	0700300495	0700300495

For further information, please contact your ESAB Robotic Specialist.

Ordering Information - Torch Mounts

	Air-Cooled		Water-Cooled	
Aristo RT Torch	**RT 42G**	**RT 62G**	**RT 42W**	**RT 62W**
Torch mount for 22° neck (standard)	0700300422	0700300422	0700300422	0700300422
Torch mount for 36° neck (standard)	0700300424	0700300424	0700300424	0700300424
Torch mount for 45° neck (standard)	0700300423	0700300423	0700300423	0700300423
KS-1 (collision sensor)	0700300434	0700300434	0700300434	0700300434
Options: FL-1 (rigid mount for electronic collision detection by the robot)	0700300435		0700300435	

For further information, please contact your ESAB Robotic Specialist.

RT tip holders

RT gas diffuser and spatter protection

Torch mount

Aristo® RT Robotic Torches
Ordering information

Ordering Information - Helix / Infiniturn (Hollow Wrist)

Robot Model	ABB IRB 15201D/1600ID	ABB IRB 2600ID	Fanuc Arc Mate 100iC	Fanuc Arc Mate 120iC	Motoman MA 1400	Motoman MA 1900
Torch mount with safety off						
RT KSC G (air-cooled)	0700300430	0700300430	0700300430	0700300430	0700300430	0700300430
RT KSC W (water-cooled)	0700300431	0700300431	0700300431	0700300431	0700300431	0700300431
Torch mount, rigid version						
RT FLC G (air-cooled)	0700300432	0700300432	0700300432	0700300432	0700300432	0700300432
RT FLC W (water-cooled)	0700300433	0700300433	0700300433	0700300433	0700300433	0700300433
Adapter flange for robot	0700300509	0700300521	0700300497	0700300497	0700300429	0700300429
Infiniturn cable, air-cooled	0700300437	0700300511	0700300436	0700300437	0700300510	0700300512
Infiniturn cable, water-cooled	0700300465	0700300514	0700300464	0700300465	0700300513	0700300515
Helix cable, air/water-cooled	0700300467	0700300517	0700300466	0700300467	0700300516	0700300518

For further information, please contact your ESAB Robotic Specialist.

Ordering Information - Tandem Torch

Aristo RT Tandem Torches	RT20F8	RT22F8	RT20F10	RT22F10
Technical Data: mixed gas 2x 550 A 100% DC water-cooled	Straight neck Wire distance at TCP 0.3 in (8 mm) (Std.)	Neck 22° bent Wire distance at TCP 0.3 in (8 mm) (Std.)	Straight neck Wire distance at TCP 0.4 in (10 mm)	Neck 22° bent Wire distance at TCP 0.4 in (10 mm)
Torch, Euro connector, 3.2 ft (1 m) cable	-	-	0700300312	-
Torch, Euro connector, 4 ft (1.2 m) cable	0700300317	-	0700300313	-
Torch, Euro connector, 5 ft (1.5 m) cable	-	0700300318	-	0700300314
Torch, Euro connector, 10 ft (3 m) cable	-	-	-	0700300315
Torch, Euro connector, 11.5 ft (3.5 m) cable	-	-	-	0700300316
Torch mount 22° for RT 20F/22F	0700300426	0700300426	0700300426	0700300426
Adaptor flange for robot (if required)	depends on robot			
KS-1 (collision sensor)	0700300434	0700300434	0700300434	0700300434
Options: FL-1 (rigid mount for electronic collision detection by the robot)	0700300435	0700300435	0700300435	0700300435

For further information, please contact your ESAB Robotic Specialist.

Robot torch external cable

KUKA Hollow Wrist

Aristo® RT NG
Narrow gap robotic torch

Narrow gap torches are the perfect solution for welding in tight places. These torch necks are able to connect to any of the Standard or Hollow Wrist torches. This simplifies changeover and minimizes cost.

- **Useful in hard to reach welds**
- **Gas and water-cooled versions available**
- **Lateral welding for perfect penetration**
- **Torch can be rotated to reach different welding positions**
- **Attractively priced consumables**
- **Special design torches with a different geometry or higher rating available upon request**

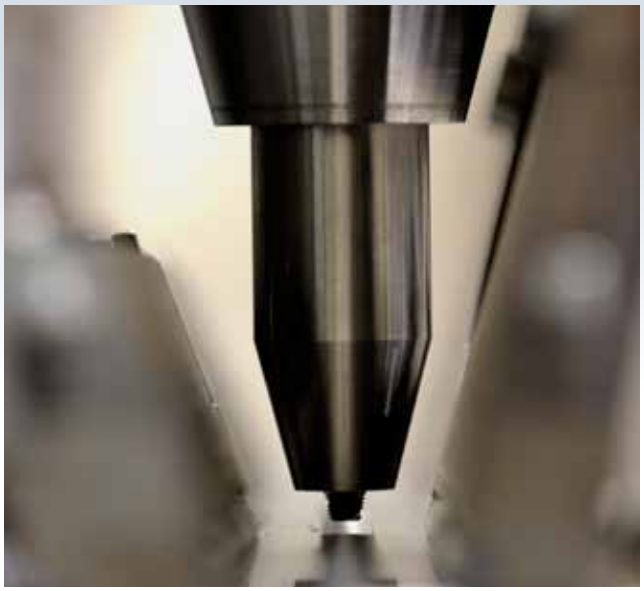
For further information, please contact your ESAB Robotic Specialist.

Specifications

		RT NG
Rating / Duty cycle (10 min. cycle)	gas-cooled:	Mixed gas 250 A / 60 % , 150 A / 100 % CO_2 300 A / 60 % , 180 A / 100 %
	water-cooled:	Mixed gas 250 A / 100 % CO_2 300 A / 100 %
Wire diameter	0.03 - 0.05 in. (0.8 - 1.2 mm)	
Weight	ca. 1.5 lbs (0.66 kg)	
Standard	IEC 60974-7	
Connection	compatible to RT NG cable assemblies and push-pull drives	
Torch rating will be reduced when using pulse-arc power sources.		

Friction Stir Welding Systems
For 2D and 3D applications

Friction Stir Welding (FSW) has been used for the high quality joining of aluminum since its invention in the early 1990's.



The superior joint quality results from a solid-state procedure, where no filler material or shielding gas is used. The joint is the result of a rotating tool being forced into the material and traversed along the joint line. The material, suppressed by the tool's shoulder, becomes plastic and reforms homogenously leaving a solid bond between the two pieces.

The technique was developed in the United Kingdom at TWI (The Welding Institute) in the early 1990's, when ESAB joined a group-sponsored project focused on developing the process.

One of the first industries to adapt the FSW process is the automotive industry, where relatively soft aluminum alloys - AA5000 and AA6000 series - are used in thicknesses under 0.1 in. (3 mm).

Commercialization of the process started a few years later with the successful use of ESAB FSW installations at Marine Aluminium (Haugesund, Norway) in 1996, and at Boeing (Wichita, Kansas, USA) in 1998.

FSW has gained a sound reputation within the welding community as an easy-to-use, defect-free process, although traditionally limited to 2D welds as in ship panels.

The joining of multi-dimensional joints remained a challenge for FSW. This is because machines are predominantly built to manage process requirements rather than enabling motion flexibility.

However, ESAB's research and development lead to the successful launch of the Rosio™ - a robotic Friction Stir welder for 3D weldments.

Legio™ Friction Stir Welding
A modular Friction Stir Welding system

- **The modular system makes it possible to assemble welding stations to suit the most varied FSW applications.**
- **In a series of seven sizes there are five basic designs: S, ST, U, UT, and double-headed ST**
- **The S- and ST-models are designed for linear welding (x and z), U- and UT-models for 2D (x-y and z), and double-headed versions are for welding hollow profiles**
- **These basic types can be supplemented with different types of equipment to suit the most varied production needs with maximum flexibility to any production line**
- **The larger S- and U-models are designed to be easily integrated with larger fixtures, rotary units, and exchangeable clamping systems**
- **For the production of smaller workpieces, the UT- and ST-models are the most suitable with tables prepared with a hole pattern where fixtures can be attached**
- **All machines are designed with a rigid framework for high performance during load conditions**
- **The welding head travels on heavy-duty linear bearings, driven by a rack and pinion drive system**
- **All Legio machines have an ESAB Human Machine Interface (HMI) control system, specially developed for FSW**
- **Control the welding process (the vertical Z-axis) either by force or position control; a hydraulic cylinder with a closed loop system controls the Z-axis**

Please contact ESAB for ordering information.

Specifications

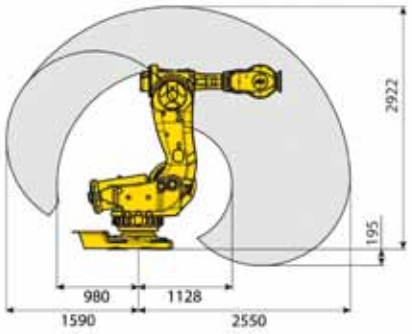
	Welding Depth, in. (mm)						
	FSW 1	**FSW 2**	**FSW 3**	**FSW 4**	**FSW 5**	**FSW 6**	**FSW 7**
Al 236 in. (6000 mm)	0.12 (3)	0.20 (5)	0.40 (10)	0.71 (18)	1.38 (35)	2.36 (60)	3.94 (100)
Al 197 in. (5000 mm)	0.08 (2)	0.14 (3.5)	0.28 (7)	0.40 (10)	0.80 (20)	1.57 (40)	2.95 (75)
Al 79 in. (2000 mm)	0.06 (1.5)	0.10 (2.5)	0.20 (5)	0.35 (9)	0.71 (18)	0.98 (25)	2.75 (70)
Al 275.5 in. (7000 mm)	0.06 (1.5)	0.10 (2.5)	0.20 (5)	0.35 (9)	0.71 (18)	0.98 (25)	2.75 (70)
Cu (Oxygen-free)	0.03 (0.8)	0.06 (1.5)	0.12 (3)	0.28 (7)	0.47 (12)	0.98 (25)	1.57 (40)
Max. welding speed, ipm (m/min)	79 (2)	79 (2)	79 (2)	79 (2)	79 (2)	79 (2)	79 (2)
Vertical down force, kN	6	12.5	25	60	100	150	200

Rosio™ Friction Stir Welding Robot

Friction Stir robot for challenging joints

- **The Rosio Friction Stir Welding robot system enables flexible joining of complex structures, ideally aluminum**
- **The ability to perform welds in an arbitrary direction of a 3D work space increases the possibilities of usage for new challenging FSW applications**
- **The cell consists of an ABB IRB 7600 robot, modified for the purpose of FSW**
- **The welding equipment is integrated in the mechanical structure of the robot without limiting the robot's standard working envelope**
- **The robot's reachable work space spans over 8 ft (2.5 m), in which a down force of up to 13 kN may be applied during welding**
- **Running on the state-of-the-art control system IRC5, an embedded force control solution allows in-contact motions with high accuracy**
- **Extension to the standard motion programming language is included - this extension includes instructions for welding linear in arbitrary directions, circular, and square shaped paths, as well as functionalities to support custom made path programming and spindle operation**
- **To provide valuable feedback to the operator, a Human Machine Interface (HMI) is included, extending the IRC5's own interface on the Flex Pendant, based on WinCE**

Please contact ESAB for ordering information.



Friction Stir Welding

Specifications

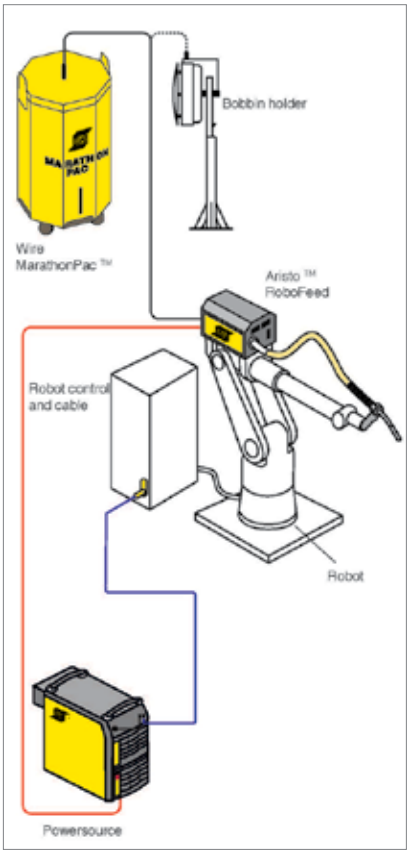
	Welding depth, in. (mm)
Al 236 in. (6000 mm)	0.04-0.28 (1-7)
Al 197 in. (5000 mm)	0.04-0.24 (1-6)
Al 79 in. (2000 mm)	0.04 - 0.20 (1-5)
Al 275.5 in. (7000 mm)	0.04 - 0.20 (1-5)
Welding speed, ipm (m/min)	>39.4 (>1)
Spindle rotation, max rpm	3000
Vertical down force, kN	13
Spindle torque (stall), Nm	44
Robot reach, in. (mm)	100 (2550)
Robot base dimensions, L x W in. (mm)	47.5 x 47 (1206.5 x 1200)
Robot weight, lbs. (kg)	5511.5 (2500)
Cabinet dimensions, L x W x H in. (mm)	85 x 28.5 x 28 (2160 x 725 x 710)
Cabinet weight, lbs. (kg)	551 (250)
Input voltage, V, 50 Hz	400

Swift Arc Transfer™
High-speed robotic MIG welding

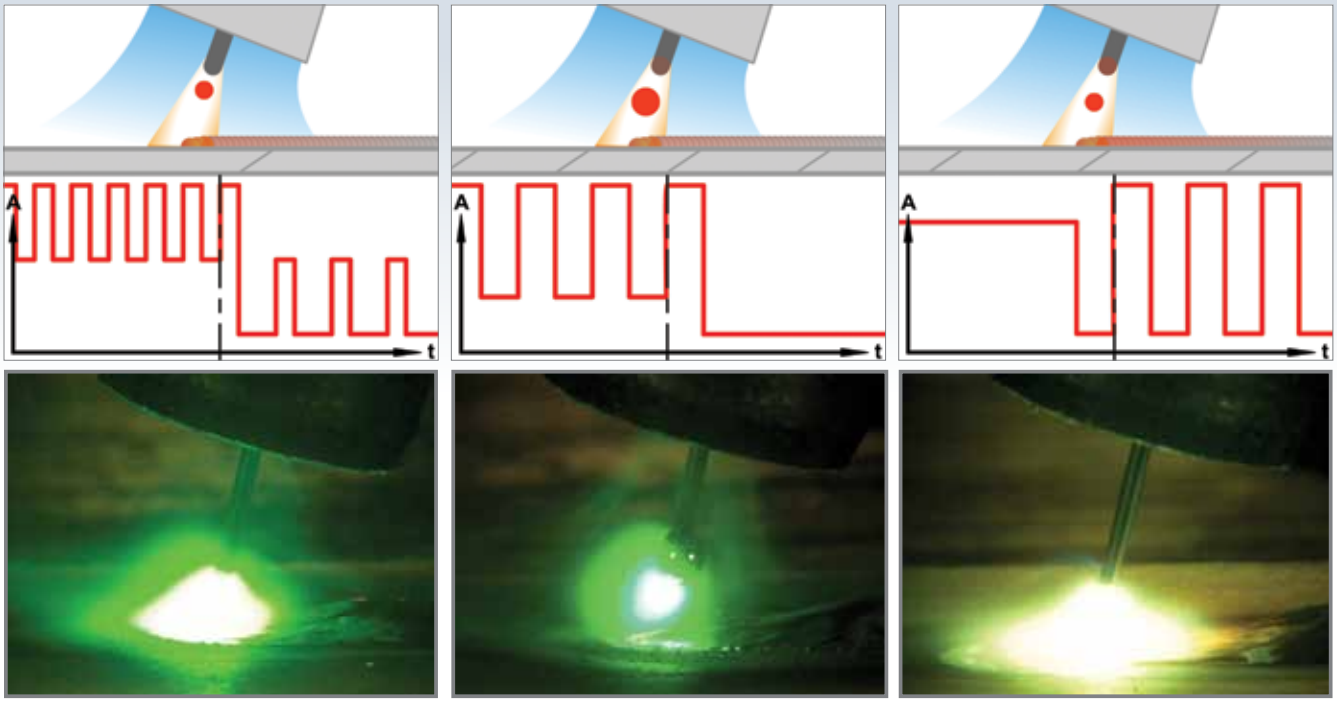
- Swift Arc Transfer (SAT) is a high productivity MIG process using OK AristoRod non-copper-coated wires with Advanced Surface Characteristics (ASC) at travel speeds well beyond the limits of normal Spray Arc welding
- The advantage OK AristoRod non-copper-coated wires over copper-coated wires is that it does not quickly contaminate the feed system with copper particles
- Synergic lines are available for three OK AristoRod wire sizes and various shielding gases
- SAT produces flat welds with good penetration and no undercut
- An additional advantage is the low heat input, resulting in less deformation
- SAT is developed for robotic and automated welding and suited for fillet and overlap welds in thin to thick plate in downhand positions
- SAT uses ESAB inverter power sources together with the Aristo Robofeed 3004HW wire feeder for wire feed speeds up to 1181 ipm (30 m/min) in conjunction with the Aristo Pendant U8$_2$ Plus control unit
- ESAB provides a complete package of equipment, consumables and synergic lines as well as the expertise to successfully implement the Swift Arc Transfer process

Ultimate Welding Technology for Robots

- ESAB's Aristo U8$_2$ robot package is a complete set of welding equipment and consumables, based on ESAB's latest digital power source technology
- The package consists of:
  - Aristo Mig U5000iw inverter or Origo Mig 4002c, 5002c or 6502c chopper power source
  - Aristo Pendant U8$_2$ Plus control unit with SAT synergic lines or the Aristo W8$_2$ interface for different robot brands
  - Aristo Robofeed 3004HW ELP encapsulated wire feeder with up to 1181 ipm (30 m/min) wire feed speed
  - Cable packages
  - Marathon Pac bulk wire drum with robot quality welding wire and optional bobbin holder
- The robot package can be installed to enable SAT welding on newly built robots, but also for retrofit of existing installations



Aristo® SuperPulse™
Innovative process for heat input control



Pulse / Pulse | Pulse / Short Arc | Spray / Pulse

Aristo SuperPulse is a further development of the Pulse/Pulse concept, giving full control over the heat input and thereby expanding the scope of application of the MIG process. In addition to Pulse/Pulse, the following arc mode combinations and applications are possible:

- **Pulse/Short Arc enables the welding of very thin sheet metal**
- **Productive welding of root passes replacing the TIG process**
- **Spray Arc/Pulse - very efficient arc mode for positional welding of thick materials**
- **Aluminum can be welded straight upwards, without weaving**
- **MIG brazing of very thin sheet material**

Aristo SuperPulse Benefits:

- **Easier positional welding**
- **Uniform penetration**
- **Less sensitive for root gap variations**
- **Less sensitive for unequal heat transfer**
- **TIG weld appearance with the MIG process**
- **Suitable for automated welding, e.g. with Railtrac and Miggytrac automated welding tractors**
- **Extends the working range for larger wire sizes**
- **With its precisely adjustable heat input and depth of penetration, Aristo Superpulse can solve difficult welding tasks and increase productivity**

QSet™
Short Arc welding with a single button

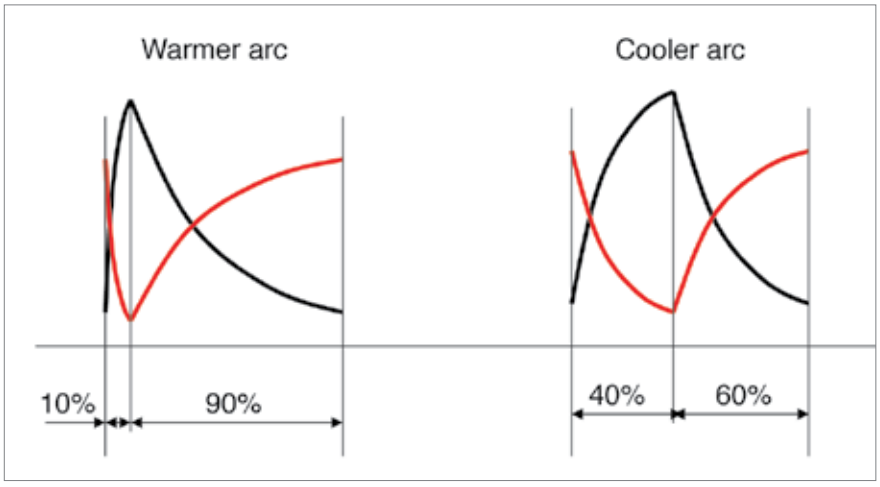
QSet is an innovation has improved the efficiency of Short Arc welding. One push on the QSet button, and a few seconds of test welding, is all it takes to find optimal Short Arc parameter settings - automatically! Benefits include increased productivity and improved weld quality.

With QSet, by pushing one single button, the machine automatically selects the optimal short circuit frequency for the gas/wire combination installed, - maintained when the welder adapts the wire feed speed to the level required for the application. It just needs a few seconds of test welding. The same procedure is repeated when changing wire type or diameter and/or shielding gas and the machine will, again, find the optimal arc setting.

It couldn't be easier! Welders will save valuable time in arc setting and can concentrate their energy and skills on producing the perfect weld. Time will also be saved on weld cleaning - the ideal arc setting will reduce spatter to an absolute minimum.

QSet is available for robotic applications, installed on Origo Mig 4002c, 6502c, and Aristo Mig U5000i power sources with Aristo Feed U6 or U82 panel wire feeders.

QSet artificial intelligence in welding can be used with our complete bus-controlled inverter and chopper power source range.



With QSet, the ratio of arc time and short circuit time can be adjusted to obtain a warmer arc, while the short circuit frequency remains the same.

OK AristoRod™ & Marathon Pac™
An unbeatable combination

Marathon Pac – Octagonal Bulk Wire Drums

For many ESAB customers, Marathon Pac is key in maximizing production efficiency and quality. In fact, it can cut down time on spool changes and maintenance by almost 95%. Bulk supply Marathon Pacs are available packed with either 551 or 1050 lbs (250 or 475 kg) of OK AristoRod non-copper-coated welding wire.

An 'Endless' version combines the contents of a series of Marathon Pacs to form a continuous in-line supply source. As each drum empties, the subsequent drum takes over and a new drum is added to the line to form an uninterrupted supply of welding wire. ESAB supplies a full range of accessories for efficient handling and installation of Marathon Pacs.

Empty Marathon Pacs can be folded flat to save space and can be disposed of environmentally-friendly.

New ASC wire surface technology

OK AristoRod non-copper-coated welding wires with Advanced Surface Characteristics (ASC) resist corrosion during storage, improve feedability and arc stability and also reduce contact tip wear to a level equal to the very best copper-coated wires.

OK AristoRod with ASC has a number of unique features with advantages for manual, automated, and robotic welding. These translate into clear benefits which, together, add up to increased productivity and lower welding costs.

Feature	Benefit
Consistent welding performance	Consistent weld results
Stable arc with low feeding force	High weld quality. Reduced rework or post weld cleaning
Excellent arc ignition	Reduced post weld cleaning
High current operability	Higher productivity
Extremely low spatter level	Reduced post weld cleaning
Trouble-free feedability, even at high wire feed speeds and long feed distances	Higher productivity, reduced equipment downtime
Low fume emission	Cleaner working environment

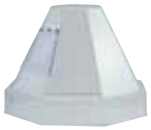
For more information, please see the Marathon Pac brochure (SWR-10055).

General Accessories

Product	Use For	Length	Part Number	
Wire conduit attachment	Standard and Mini Marathon Pac		899F109	
Wire conduit connector to feed unit	Standard, Mini and Jumbo Marathon Pac		899F71	
Quick connector plastic hood	Jumbo Marathon Pac		F102442880	
Lifting yoke	Standard and Mini Marathon Pac		F102607880	
	Jumbo Marathon Pac		F102537880	
Trolley	Standard and Mini Marathon Pac	Without pos. 5	F102365880	
	Jumbo Marathon Pac		F103900880	
Wire conduit	Standard, Mini and Jumbo Marathon Pac	10 ft. (3.0 m) 15 ft. (4.5 m) 26 ft. (8.0 m)	F102437882 F102437883 F102437884	
Plastic hood flat	Standard and Mini Marathon Pac		F102540001	
Plastic hood cone	Jumbo Marathon Pac		F103901001	
Plastic pear	Endless Marathon Pac		F102679003	

Marathon Pac™
Accessories

Aluminum Accessories

Product	Use For	Part Number	
Lifting yoke	Jumbo Marathon Pac	F102537880	
Trolley	Jumbo Marathon Pac	F103900880	
Wire conduit connector to feed unit (ESAB) Contact ESAB for other feeding units	Contact ESAB		
Plastic hood cone	Jumbo Marathon Pac	F103901001	

For specific alloy and welding machine set-up instructions please contact your local ESAB sales office or representative.

JetStream RT
Torch cleaning station

- **Innovative cleaning technology**
- **The torch head is blasted with a particle jet**
- **Limitations of the reamer cleaning are overcome**
- **For prismatic, round and elliptical gas nozzles**
- **Inside cleaning of conical nozzles**
- **Cleaning of contact tips, tip holders, and insulators**
- **Cleaning of the gas nozzle front and outside**
- **Leaves a clean, smooth surface and enhances laminar gas flow in the torch**
- **Longer life of all consumables**
- **Enhances cleanliness of the welding area**
- **No mechanical damage to the torch**

before after

Ordering Information - JetStream

JetStream Torch Cleaning Station	Part No.
JetStream RT cleaning station	0700300405
FineSpray spraying unit	0700300406
Granulate for JetStream	0700300399
RT anti-spatter liquid 1.3 gal (5 l)	0700300400

For further information, please contact your ESAB Robotic Specialist.

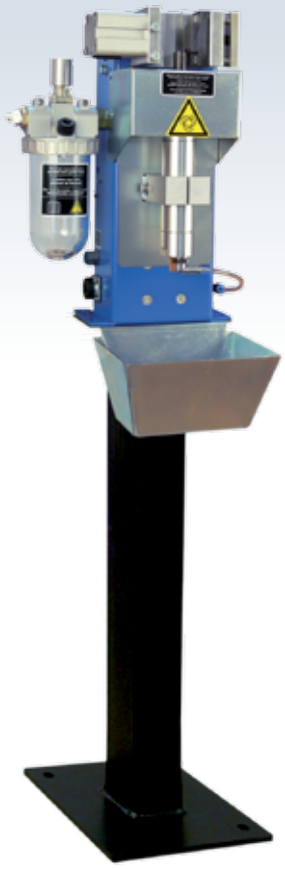
JetStream & FineSpray Seals

Seals for JetStream and FineSpray	Part No.	For Nozzle OD	Suitable for Torch Model
Rubber seal ID 1.0 in (25 mm) JetStream	0700300416	1.0 in. (26 mm)	RT 52
Rubber seal ID 0.9 in (23 mm) JetStream	0700300412	0.9 in. (24 mm)	RT 62
Rubber seal ID 0.7 in (19 mm) JetStream	0700300418	0.7 in. (20 mm)	RT 42
Rubber seal elliptical JetStream	0700300413	0.9 x 1.5 in. (24 x 40 mm)	RT 20F/22F
Rubber seal ID 1.1 in (29 mm) FineSpray	0700300419	1.0 in. (27 mm)	RT 62
Rubber seal ID 1.0 in (26 mm) FineSpray	0700300414	0.9 in. (24 mm)	RT 52
Rubber seal ID 0.8 in (22 mm) FineSpray	0700300420	0.7 in. (20 mm)	RT 42
Rubber seal elliptical FineSpray	0700300415	0.9 x 1.5 in. (24 x 40 mm)	RT 20F/22F

For further information, please contact your ESAB Robotic Specialist.

RT 2000
Automatic torch cleaning station

- **The reamers are easily exchangeable**
- **The procedure is initiated by mechanically activating a valve with the gas nozzle of the torch**
- **The wire cutter may be ordered as accessory for the RT 2000 and can be mounted subsequently**
- **Cutting the wire to a defined length will reduce ignition problems**
- **Cutting capacity is 1/6 in. (1.6 mm) steel wire**



Ordering Information

RT 2000 Torch Reamer 0700300401
RT 2000 Torch Reamer with Wire Cutter 0700300402

Options and Accessories

Metal Stand for RT 2000 0700300403
RT Wire Cutter (can be used independently) 0700300404

Specifications

	RT 2000
Compressed air supply	oil-free compressed air, 6 bar
Necessary air flow	approx. 7 l / sec.
Program control	pneumatic
Start signal	24 V DC
Signal output (unit ready)	24 V DC
Cleaning time	approx. 4 -5 sec.
Dosage of anti-spatter liquid	adjustable
Supply of anti-spatter liquid	drip-feed unit, approx. 300 ml non pressurized canister, approx. 1000 ml
Dimensions, L x W x H	13.5 x 9.5 x 6.4 in. (34.5 x 24.0 x 16.25 cm)
Weight	approx. 21 lbs (9.5 kg) (without stand and wire cutter)
	RT Wire Cutter
Start signal	mechanical by welding torch
Function	pneumatic, operating pressure: 6 bar
Supply voltage	24 V DC
Weight	6.6 lbs (3.0 kg)
The wire cutter can be subsequently mounted to the RT 2000 unit	

KUKA

Unrivaled Service and Support.

Every ESAB product is backed by our commitment to superior customer service and support. Our skilled customer service department is prepared to quickly answer any questions, address problems, and help with maintenance and upgrading of your equipment. Our products are backed with the most comprehensive warranty in the business.

With ESAB, you can be sure that you have purchased equipment that will meet your needs today and in the future. Product and process training is also available. Ask your ESAB sales representative or distributor for a complete ESAB solution.

ESAB Welding & Cutting Products / esabna.com / 1.800.ESAB.123

USA: P.O. Box 100545, 411 South Ebenezer Road, Florence, SC 29501-0545
Canada: 6010 Tomken Road, Mississauga, Ontario L5T-1X9
Mexico: Ave. Diego Díaz de Berlanga, No. 130, Col. Nogalar San Nicolás de los Garza N.L. CP 66480 Monterrey, Mexico

FIND US | facebook.com/esabna | twitter.com/esabna | youtube.com/esabweb

MANAGEMENT SYSTEM CERTIFICATION ISO 9001 = ISO 14001 = OHSAS 18001 DNV

AUT-1075 02/13